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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,720	04/30/2001	Qun Wei	2033.000	3724

7590 06/17/2005

GEHRKE & ASSOCIATES S C
123 North 86th Street
Wauwatosa, WI 53226

EXAMINER	
FETTEROLF, BRANDON J	
ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/763,720	WEI ET AL.	
	Examiner	Art Unit	
	Brandon J. Fetterolf, PhD	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-18* is/are pending in the application.

4a) Of the above claim(s) *18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-14,16 and 17* is/are rejected.

7)☒ Claim(s) *15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Wei et al.

DETAILED ACTION

The Amendment filed on March 16, 2005 in response to the Non-Final Office action (12/16/2005) is acknowledged and has been entered.

Claims 9-18 are currently pending.

Election/Restrictions

Newly submitted claim 18 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 18, as specifically drawn to a method of regulating the immune system of a mammal comprising administering an effective of SEQ ID NO: 1 to the mammal, was not previously originally claimed and thus, would require a separate search.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 18 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claims 9-17 are currently under consideration

Information Disclosure Statement

The information disclosure statement filed March 16, 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each article listed that is not in the English language, e.g. Wei et al. Chinease Journal of Biochemistry, 1993; 9: 240. It has been placed in the application file, but all of the information referred to therein has not been considered.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Objections Maintained:

The specification remains objected to (page 6, lines 18-21, page 7 lines 21 and 22, and page 8, line 26) for improper disclosure of amino acid and nucleotide sequences without a respective sequence identifier, i.e. a SEQ ID NOs: for the reasons of record in the previous office action (page 3) and for the reasons set forth below:

Although Applicants contend that a copy a diskette and paper copy of the sequence listing was submitted in a Response to Notification of Missing Parts filed on August 29, 2001, Applicants have not clearly identified the amino acid and/or nucleotide sequences found in the specification (page 6, line 18-21, page 7, lines 21-22 and page 8, line 26) with the appropriate sequence identifier for each sequence. Thus, the specification remains objected to.

Rejections Maintained:

Note: Upon review of the previous office action, it is noted that the rejection of claims 1-6 under 35 U.S.C. 102(e) as being anticipated by Aitken et al. (Eur. J. Biochem. 1984; 139: 663-671) (pages 6-7) was mislabeled and should have been a 102(b) because the date of the applied reference was more than one year or the priority date sought (1998).

The rejection under 35 U.S.C. 102(b) of claims 1-6 will be reapplied to new claims 9-13 as being anticipated by Aitken *et al.* (Eur. J. Biochem. 1984, 139; 663-671) for the reasons of record (pages 6-7) and the reasons set forth below:

In reference to the previous office action, which held that the prior art teaches a pharmaceutical composition comprising the claimed CaN subunit B in a pharmaceutically acceptable carrier such as 0.05M ammonium bicarbonate, Applicants argue that Aitken does not disclose each and every element of the present invention. For example, Applicants submit that although Aitken discloses a method of identifying CaN subunit B, nothing in the reference discloses or suggest using CaN subunit B in a pharmaceutical composition or in any treatment of a disease in mammals. These arguments have been carefully considered but are not found persuasive.

First, the previous rejection was based on that fact that Aitken *et al* discloses a pharmaceutical composition comprising the claimed CaN subunit B, SEQ ID NO: 1, in a pharmaceutically acceptable carrier such as 0.05 M ammonium bicarbonate. Thus, while applicants

contend that the prior art reference does not disclose each and every element of the present invention such as using (emphasis added) CaN subunit B in a pharmaceutical composition or in the treatment of a disease in a mammal, Applicants have not provided evidence to the contrary or established a patentable difference between the presently claimed product and the prior arts pharmaceutical composition. For example, the intended use of the compound must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. A composition is a composition irrespective of what its intended use is (emphasis added). See In re Tuominen, 213 USPQ 89 (CCPA 1982). Therefore, the rejection is maintained.

All other rejections and/or objections are withdrawn in view of applicant's amendments and arguments there to.

New Objections:

Claim Objections

Claim 14 is objected to because of the following informalities: For example, Claim 14, 2nd line recites "o" which should be changed to recite "of". Appropriate correction is required.

New Rejections:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9, 11-14 and 16-17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of treating cancer comprising administering an effective amount of SEQ ID NO: 1, does not reasonably provide enablement for a method of treating any and/or all diseases comprising administering an effective amount of SEQ ID NO: 1 to a mammal. The specification does not enable any person skilled in the art to which it pertains, or

with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The factors to be considered in determining whether undue experimentation is required are summarized In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988). The court in Wands states: "Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' " (Wands, 8 USPQ2d 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations." (Wands, 8 USPQ2d 1404). The factors to be considered in determining whether undue experimentation is required include: (1) the quantity of experimentation necessary, (2) the amount or direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

The instant claims read on a pharmaceutical composition for the treatment of a disease comprising an effective amount of SEQ ID NO: 1, and a method of treating a disease comprising administering an effective amount of SEQ ID NO: 1 to a mammal. Thus, the claims read on a pharmaceutical composition and a method of treating any and/or all diseases by administering an effective amount of SEQ ID NO: 1.

The scope of the instant claims is not commensurate with the enablement of the instant disclosure, because practice of the claimed invention would require undue experimentation by an artisan of ordinary skill in the art. The instant specification is not enabling for claims drawn to a pharmaceutical composition for the treatment of any and/or all diseases comprising an effective amount of SEQ ID NO: 1, and a method of treating any and/or all diseases comprising administering an effective amount of SEQ ID NO: 1 to a mammal. In the instant case, the specification only provides for treating cancer, wherein administration of CaN B, SEQ ID NO: 1, to mice with cancer resulted in life prolongation and tumor inhibition. Although the specification contemplates treating other diseases by regulating the immune system function such as chronic virus infection, senescence, immune depression caused by radiotherapy treatment and other disease

caused by the disorder of the immune function, the specification appears to be silent on any in vivo or in vitro information for these diseases.

However, the teachings above do not clearly indicate whether or not the administration of an effective amount of SEQ ID NO: 1 could treat any and/or all disorders. For example, Wei et al. (Drug Deveopment 2002; 56: 40-43) studied calcineurin B subunit for the use in medicine. Specifically, the article teaches (abstract) that although the anti-cancer effect of calcineurin B subunit is remarkable showing reduced ascites and growth of cancer, calcineurin B subunit alone has no direct effect on cell growth. For example, Wei et al. disclose (page 43, 1st column 3rd paragraph) that CN B subunit had no inhibitory effect for H22 cancer cells and suggest that the anti-cancer function of CN B depends on the immune regulatory ability. Thus, it appears that CN B does not directly treat the disease, but instead acts as a biological modifier. Moreover, a review of the prior art does not suggest the use of calcineurin B, specifically SEQ ID NO: 1, for the treatment of any disease other than cancer (see for example review by Rusnak et al. Physiological Review 2000; 80; 4). Furthermore, the claimed invention relates to a method of treating any and/or all diseases, and the relative skill of those in the art is high, generally that of a PhD or MD. Thus, the lack of adequate guidance from the specification with regard to the actual treatment of all diseases in a mammal with the claimed compound fails to rebut the presumption of unpredictability extant in this art. Applicants fail to provide the guidance and information required to ascertain with particular type of disease the claimed polypeptide will be effective against without resorting to undue experimentation. Applicant's limited disclosure of the treatment of cancer is noted but is not sufficient to justify claiming all diseases broadly.

Absent a reasonable *a priori* expectation of success for using a specific peptide to treat any particular type of disease, one skilled in the art would have to extensively test various disease types. Since each prospective embodiment, and indeed future embodiments as the art progress, would have to be empirically tested, and those which initially failed tested further, an undue amount of experimentation would be required to practice the invention as it is claimed in its current scope, because the specification provides inadequate guidance to do otherwise.

Note: Claim 15 is objected to as being dependent from a rejected independent claim. There does not appear to be any prior which suggests treating cancer comprising administering an effective amount of SEQ ID NO: 1.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon J. Fetterolf, PhD whose telephone number is (571)-272-2919. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brandon J Fetterolf, PhD
Examiner
Art Unit 1642

BF

JEFFREY SIEW
SUPERVISORY PATENT EXAMINER
6/1/05